

Appl. No. : 09/577,449
Filed : May 24, 2000

REMARKS

Reconsideration and allowance of the above-referenced application are respectfully requested.

The indication that the previously made claim rejections have been withdrawn is appreciatively noted.

Claims 1-25 stand rejected under 35 U.S.C. 103 as allegedly being unpatentable over Bjorn in view of Takhar. This contention remains respectfully traversed.

As established in the previous response, and as apparently accepted in the current rejection, Bjorn creates a biometric key, by determining absolute dimensions of the biometric information. This is done in Bjorn by extracting features from a fingerprint and creating a hash of the message to define the encryption key. The encryption key includes absolute dimensions and even uses these dimensions.

The rejection states, however, that Bjorn could be modified by the ratios that are taught in Takhar. This contention, however, is respectfully traversed. Specifically, while Takhar does teach information about certain kinds of ratios, these ratios are not used for the purpose of obtaining any information about the fingerprint, but rather to position the finger in a way to obtain a better fingerprint scan. As described in column 26, beginning at line 7, an ideal scan has fingerprint ridge widths that are equal to the width of fingerprint valleys. According to Takhar, this is the best scenario for creating a two valued vector data. The adaptive technique described by Takhar normalizes the ratio of one to one between ridges and valleys, in order to improve the quality of the fingerprint that is received.

Appl. No. : 09/577,449
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Therefore, combining Takhar with Bjorn would not cure Bjorn's lack of a system that shows creating an encryption key without determining absolute dimensions. In fact, this would still use Bjorn's teaching of using absolute dimensions, along with a scan-acquisition technique such as defined by Takhar. Takhar might teach changing the way the fingerprint is scanned, according to the ratios, to maintain a one-to-one relationship between ridges and valleys. However, there is no teaching or suggestion in Takhar of anything that would allow obtaining ratios between different biometric parts as an encryption key.

Moreover, note the specific teaching of Takhar is that the ratio between ridges and valleys is normalized as one-to-one; see generally column 26 lines 14-15. Takhar, therefore, teaches away from using his ratios for any kind of biometric or unique information. Rather, Takhar teaches that his ratios should always be maintained at one-to-one. This would make it impossible to use the teaching in Takhar for a biometric obtaining system, since all his ratios are the same, and therefore, all the obtained biometrics would then be precisely the same.

For these reasons, it is respectfully suggested that the hypothetical combination of Bjorn in view of Takhar would not teach this claimed subject matter. The Official Action acknowledges that Bjorn uses absolute dimensions. Takhar does not provide anything that could modify this teaching in Bjorn. Therefore, claim 1 should be allowable along with the claims that depend therefrom. The specific advantages of these claims were described in the previously-filed amendment. Each of these claims should therefore be allowable.

Appl. No. : 09/577,449
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Claim 7 defines determining a relationship between biometric information including a ratio between different parts of the image and using that to form a cryptographic key. This is in no way taught or suggested by the cited prior art and hence claim 7 should be additionally allowable along with the claims that depend therefrom. Claim 11 should be allowable as it specifies an additional aspect. Specifically, claim 11 specifies that both the content of the information and the sequence of entry of the information forms the code that is used as the biometric device. This is rejected based on Bjorn, and based on the language of column 4 lines 21-24 that the fingerprint image creates that into a sequence of numerical codes. However, even in this portion, it describes one single fingerprint. There is no teaching or suggestion that a code is created from a sequence of entry of the information parts, as claimed.

Claim 14 specifies a fingerprint sensor formed from an image sensor chip that has an active surface that receives the image where the active service receives a finger thereon to obtain a fingerprint and produce an output indicative of that fingerprint. As described previously, this is quite an unconventional use of an image sensor chip. Image sensor chips are intended to receive an image from a distance. Claim 14 defines that the surface itself of the image sensor chip is used to image of a fingerprint.

The rejection says that this is shown in Bjorn column 3 lines 25-35. However, this cited portion simply states that the feature extraction unit receives the fingerprint from the fingerprint sensor. The fingerprint sensor that is used in Bjorn is not specifically described at all. Nowhere is there any teaching or suggestion of anything in the art of sensing a fingerprint in this way. Again, image sensor chips usually sense a

Appl. No. : 09/577,449
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large image from a small chip based on convergence of light rays from the large image to the small chip. However, this system recognizes that when the user puts their finger directly on the small chip, a very high resolution version of the image can be obtained. Therefore, claim 14 should be allowable for these reasons.

Claim 17 defines forming a cryptographic key not only based on the information from the biometric parts, but also based on the information of the sequence of entry of the parts. This is nowhere taught or suggested by the cited prior art. The fact that Bjorn produces an output sequence has nothing to do with the subject matter of claim 17 where the cryptographic key is formed from the sequence of entry of the parts. Therefore, claim 17 should be allowable for these reasons.

In order to narrow the issues in this rejection, claims 22-25 are canceled.

It is believed that all of the pending claims have been addressed in this paper. However, failure to address a specific rejection, issue or comment, does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above are not intended to be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

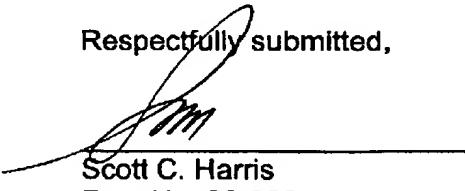
Therefore, and in view of the above amendments and remarks, all of the claim should be in condition for allowance. A formal notice to that effect is respectfully solicited.

Appl. No. : 09/577,449
Filed : May 24, 2000

No fees are believed necessary. However, please charge any fees due in connection with this response to Deposit Account No. 50-1387.

Respectfully submitted,

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